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What is Claimed is:

- [c1] A method of forming a resistor in a Fin structure comprising the steps of:
forming at least one vertically oriented semiconductor body having exposed vertical surfaces on a substrate;
implanting dopant ions into said exposed vertical surfaces of said at least one semiconductor body off-axis at a concentration and energy sufficient to penetrate into said exposed vertical surfaces of said at least one semiconductor body without saturation; and
forming contacts to said at least one semiconductor body.
- [c2] The method of Claim 1 wherein said at least one vertically oriented semiconductor body is formed via lithography and etching.
- [c3] The method of Claim 1 wherein said at least one vertically oriented semiconductor body has a hard mask present atop a horizontal surface.
- [c4] The method of Claim 1 further comprising forming a mask on an exposed surface of the substrate prior to performing said implanting step.
- [c5] The method of Claim 1 wherein said dopant ions are subjected to an activation annealing step prior to forming said contacts to diffuse dopant ions within said vertical surfaces.
- [c6] The method of Claim 1 wherein, prior to forming said contacts, a patterned mask is formed over portions of said at least one vertically oriented semiconductor body while leaving end portions of said body exposed.
- [c7] The method of Claim 1 wherein said contacts are formed by ion implantation, silicidation, or a combination of ion implantation and silicidation.
- [c8] The method of Claim 1 further comprising forming connectors to said contacts.
- [c9] A method of controlling the resistance of a plurality of vertically oriented semiconductor bodies comprising the steps of:
forming a structure having a plurality of vertically oriented semiconductor bodies on a substrate, each of said bodies having exposed vertical surfaces and differing widths; and
implanting dopant ions off-axis into said plurality of vertically oriented semiconductor bodies at a concentration and energy sufficient to penetrate into exposed vertical

surfaces of said plurality of vertically oriented semiconductor bodies without saturating each semiconductor body.

- [c10] The method of Claim 9 further comprising a step of activation annealing said dopant ions to diffuse said dopant ions within each exposed vertical surface of the semiconductor bodies, wherein after said activation annealing thicker semiconductor bodies have a first dopant concentration and thinner semiconductor bodies have a second dopant concentration, said first dopant concentration is lower than said second dopant concentration.
- [c11] A Fin structure comprising:
a structure having at least one vertically oriented semiconductor body present thereon, wherein said at least one vertically oriented semiconductor body has vertical surfaces;
a doped region present in said at least one vertically oriented semiconductor body that extends inward from said vertical surfaces; and
contacts present on outer portions of said at least one vertically oriented semiconductor body, wherein said doping region and said contacts are of the same dopant type thereby providing a resistor in said at least one vertically oriented semiconductor body.
- [c12] The Fin structure of Claim 11 wherein said at least one vertically oriented semiconductor body is comprised of single crystalline Si or SiGe.
- [c13] The Fin structure of Claim 11 wherein said at least one vertically oriented semiconductor body has a hard mask present atop a horizontal surface.
- [c14] The Fin structure of Claim 11 wherein said at least one vertically oriented semiconductor body has a patterned masking layer thereon, said patterned masking layer not covering said contacts.
- [c15] The Fin structure of Claim 14 wherein said patterned masking layer is comprised of a conductive material.
- [c16] The Fin structure of Claim 15 wherein said patterned masking layer is comprised of a non-conductive material.
- [c17] The Fin structure of Claim 11 wherein said resistor is replaced with a diode.

- [c18] The Fin structure of Claim 17 wherein said diode includes said contacts that are of opposite dopant style.
- [c19] The Fin structure of Claim 17 where said diode includes said contacts wherein one of the contacts comprises a doped region having a conductivity type dopant which is different from said dopant region and the other contact is a silicide.